

Attorney Docket: 011765-0313730  
Client Reference: AF/JG/P9079US-WO

COPY

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Stage Application of PCT/GB2003/002826      Confirmation Number:

MUNCASTER ET AL.

Application No.:

Group Art Unit:

Filed: December 7, 2004

Examiner:

Title: MOUNTING DEVICE FOR A DISK DRIVE UNIT, RELEASABLE FASTENER AND  
METHOD OF TESTING A DISK DRIVE UNIT

PRELIMINARY AMENDMENT

Mail Stop Non-Fee Amendments  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Before beginning examination, please amend the above-identified National Stage  
application as follows:

IN THE SPECIFICATION:

On page 1, just after the Title, please insert the following paragraph:

This is the U.S. National Phase of International Application No. PCT/GB2003/002826, filed July 1, 2003, and also claims benefit of priority to U.S. Provisional Application No. 60/393,292, filed July 5, 2002, the contents of both of which are hereby incorporated by reference in their entireties.

On page 17, please amend the second full paragraph as follows:

A connection device, also referred to as a "releasable fastener," secures the modules together in a releasable fashion, so that the air input port 130 is aligned with the air output port 9. The connection device of this embodiment includes a pair of manual release hinges 6a, 6b, a pair of tension straps 170 and a pair of lever latches 7. It is desirable to have fastenings that enable rapid connection and disconnection of the two modules 2,3, preferably without the need for tools, and the connection device of this embodiment allows these desiderata to be met.

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A mounting device for a disk drive unit, the mounting device comprising:

a carrier module constructed and arranged to receive at least one disk drive unit, the carrier module having an air input port, the carrier module being arranged to direct air from the air input port over a disk drive unit received in the carrier module;

a temperature control module comprising an air flow control device, the temperature control module having an air output port; and,

a ~~connection device~~ releasable fastener for releasably fastening the carrier module to the temperature control module with the air input port of the carrier module in register with the air output port of the temperature control module,

wherein the temperature control module is arranged to provide air to said air input port for controlling the temperature of a said disk drive unit received in the carrier module to be at a predetermined temperature during operation of the disk drive unit.

2. (Currently Amended) A mounting device according to Claim 1, wherein the carrier module has an air outlet port and the temperature control module has an air inlet port, the arrangement being such that when the ~~connection device~~ releasable fastener fastens the carrier module to the temperature control module the air outlet port of the carrier module is in register width with the air inlet port of the temperature control module.

3. (original) A mounting device according to Claim 2, wherein the temperature control module has a fan and is arranged to recirculate air from the air outlet port of the carrier module to the air output port of the temperature control module.

4. (Currently Amended) A mounting device according to Claim 1 ~~any preceding claim~~, wherein the ~~connection device~~ releasable fastener comprises a manually releasable hinge pivotally connecting the carrier module and the temperature control module along one edge of the carrier module and the temperature control module and a lever latch for securing

the carrier module to the temperature control module along an edge of the carrier module and temperature control module opposite the said one edge.

5. (Original) A mounting device according to Claim 4, wherein the manually releasable hinge has a pin portion, a receptacle portion and a hook member, the pin portion being secured to and supported substantially parallel to and spaced from a wall of one of said the carrier module and temperature control module, the receptacle portion being formed on the other of the carrier module and the temperature control module, the receptacle portion being constructed and arranged to engage said pin portion, the receptacle portion having a curved wall for abutment by the pin portion and the receptacle formation defining an opening such that the pin portion may be brought into engagement with the curved wall of the receptacle portion via the opening, and the hook member being constructed and arranged to engage the carrier module and the temperature control module to retain the pin portion in engagement with the curved wall of the receptacle portion.

6. (Currently Amended) A mounting device according to Claim 1 ~~any preceding claim~~, wherein the carrier module is constructed and arranged to simultaneously receive plural disk drive units.

7 (Original) A mounting device according to Claim 6, comprising air flow passages arranged to divide air flow from the output port of the temperature control module for application to each of plural disk drive units received in the carrier module.

8. (Currently Amended) A mounting device according to Claim 6 ~~or 7~~, having air flow passages arranged to combine the air flow from each of plural disk drive units received in the carrier module to provide a single air flow from the carrier module.

9. (Original) A mounting device according to Claim 7, wherein the passages are arranged to divide the air flow such that air flows in the same direction around each disk drive unit.

10. (Currently Amended) A mounting device according to Claim 7 ~~any of Claims 7 to 9~~, comprising a baffle that provides said air flow passages, the baffle having a first side

having at least one opening for receiving an incoming air flow from the temperature control module, and a second side having plural openings for supplying air to each of plural disk drive units received in the carrier module, the baffle having a deflection structure constructed and arranged to divide the incoming air flow between said plural disk drive units.

11. (Original) A mounting device according to Claim 10, wherein the second side of the baffle has plural further openings for receiving air from that has flowed over plural disk drive units received in the carrier module, and the first side of the baffle has at least one opening for passing said air to the temperature control module.

12. (Original) A mounting device for disk drive units according to Claim 11, wherein at said second side of said baffle, said openings and said further openings are interleaved, whereby each of the plural disk drive units has a similar flow of air.

13. (Currently Amended) A mounting device for disk drive units according to Claim 1 ~~any of Claims 1-5~~, wherein the temperature control module has an electrical connection device, the carrier module has a first electrical connector for engaging a disk drive unit received in the carrier module, and the carrier module has a second electrical connector arranged to engage the electrical connection device of the temperature control module when the temperature control module and the carrier module are fastened together.

14. (Currently Amended) A mounting device for disk drive units according to Claim 1 ~~any of Claims 1-12~~, wherein the temperature control module has an electrical connection device, and the carrier module has plural first electrical connectors for engaging respective disk drive units received in the carrier module and a second electrical connector arranged to engage the electrical connection device of the temperature control module when the temperature control module and the carrier module are fastened together.

15. (Original) A releasable fastener for fastening together first and second members, the fastener comprising a pin portion for mounting on a first member, a receptacle portion for mounting on a second member and a hook member for engagement with a said first and second member, the receptacle portion being constructed and arranged to engage said pin portion, the receptacle portion having a concave curved wall and defining an opening such

that the pin portion may be brought into engagement with the curved wall of the receptacle formation via the opening, and the hook member being constructed and arranged to retain the pin portion engaged with the curved wall of the receptacle portion.

16. (Original) A releasable fastener according to Claim 15, wherein the arrangement is such that the hook member is under tension when engaged with a said first and second member.

17. (Original) A method of testing a disk drive unit in a test device comprising a temperature control module and a carrier module constructed and arranged to support said disk drive unit, wherein the carrier module has an air input port and is arranged to direct air from the air input port over a said disk drive unit received in the carrier module and the temperature control module comprises an air flow control device and has an air output port, the method comprising:

releasably fastening the carrier module to the temperature control module, such that the air input port of the carrier module is in register with the air output port of the temperature control module;

disposing said disk drive unit in said carrier module; and,

causing the temperature control module to provide air to said air input port to control the temperature of said disk drive unit disposed in the carrier module to be at a predetermined temperature during operation of the disk drive unit.

18. (Original) A method of testing a disk drive unit according to Claim 17, comprising the step of controlling the flow of air across the disk drive unit to cause air to recirculate directly across the disk drive unit, or to cause chilled air obtained by passing at least a portion of the air that has passed over the disk drive unit through a heat exchanger to flow across the disk drive unit, or to cause a mixture of directly recirculating air and chilled air to flow across the disk drive unit.

19. (Currently Amended) A method of testing a disk drive unit according to Claim 17 ~~or 18~~, wherein the temperature control module and the carrier module each have a respective part of a manual release hinge and the step of releasably fastening comprises engaging the two parts of the hinge, mutually pivotally moving the carrier module and the

temperature control module until they abut one another and securing the carrier module to the temperature control module via a lever latch.

20. (Currently Amended) method of testing a disk drive unit according to Claim 17 ~~any of Claims 17 to 19~~, wherein the carrier module has locations constructed and arranged to simultaneously receive plural disk drive units, and the disposing step comprises disposing at least two disk drive units in respective ones of said locations.

21. (Currently Amended) A method of testing a disk drive unit according to Claim 17 ~~any of Claims 17 to 20~~, comprising dividing air flow from the outlet of the temperature control module and applying a part of said divided air flow to each of plural disk drive units received in the carrier module, and combining the air flow from each of the disk drive units to provide said outlet from the carrier module.

22. (Original) A method of testing a disk drive unit according to Claim 21, wherein the dividing step comprises dividing the air flow such that it flows in the same direction around each disk drive unit.

23. (Currently Amended) A method of testing a disk drive unit according to Claim 17 ~~any of Claims 17 to 22~~, comprising providing plural types of carrier module, each type of module being suitable for a respective one of plural different types of disk drive unit.

24. (Currently Amended) A method of testing a disk drive unit according to Claim 17 ~~any of Claims 17 to 23~~, wherein the temperature control module has an electrical connection device, the carrier module has a first electrical connector secured thereto for engaging a disk drive unit received in the carrier module, and a second electrical connector arranged to engage the electrical connection device of the temperature control module when the temperature control module and the carrier module are secured together, and said step of disposing comprises connecting the electrical connection device of the disk drive unit to said first electrical connector.

25. (Original) A method of testing a disk drive unit according to Claim 24, wherein each of said different types of disk drive unit has an electrical connection device which is at

least one of differently disposed or differently configured to electrical connection devices of others of said types of disk drive units, the temperature control module has an electrical connection device, each type of carrier module has a respective first electrical connector secured thereto for engaging the electrical connection device of the corresponding type of disk drive unit received in the carrier module, and a second electrical connector arranged to engage the electrical connection device of the temperature control module when the temperature control module and the carrier module are secured together, and said step of disposing comprises connecting the electrical connection device of the disk drive unit to said first electrical connector.



IN THE ABSTRACT:

Please add the following Abstract to the application.

A disk drive unit mounting device is adapted to carry one or plural disk drive units. The mounting device includes a temperature control module and a carrier module secured together by a releasable fastener device so that the temperature control module controls the temperature of the disk drive unit. The temperature control module has an air flow control device for controlling the flow of air across the disk drive unit appropriately according to the required temperature for the disk drive unit. The mounting device may be used in testing disk drive units.

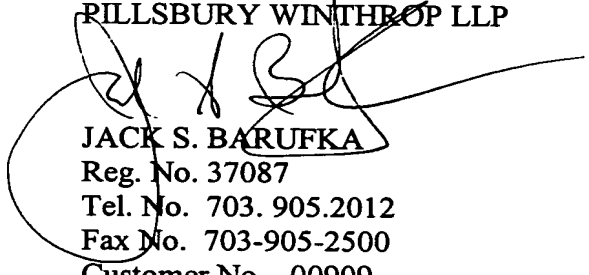
REMARKS

Upon entry of this Preliminary Amendment, claims 1-25 are pending in this application. Claims 4, 6, 8, 10, 13, 14, 19, 20, 21, 23 and 24 have been amended to remove multiple dependencies. The priority claim has also been recited and an Abstract has been submitted. In addition "connection device" has been changed to -releasable fastener—to more clearly avoid 35 U.S.C. § 1, ¶6 in the specification and claims 1, 2 and 4..

An early and favorable review on the merits of this national phase application is earnestly solicited.

Respectfully submitted,

PILLSBURY WINTHROP LLP



JACK S. BARUFKA

Reg. No. 37087

Tel. No. 703. 905.2012

Fax No. 703-905-2500

Customer No. 00909

Date: December 7, 2004

P.O. Box 10500  
McLean, VA 22102  
(703) 905-2000

PTO RECEIPT Attorney Docket: 011765-0313730

Atty: Jack S. Barufka/joyce hill

Appln. No: Date: December 7, 2004

Inventor(s): TIMOTHY JOHN MUNCASTER ET AL.

Title: MOUNTING DEVICE FOR A DISK DRIVE UNIT, RELEASABLE  
FASTENER AND METHOD OF TESTING A DISK DRIVE UNIT

☒ Preliminary Amendment ☒ Application Data Sheet  
☐ Appendix ☒ Utility/Design/Provisional  
☒ 38 No. of Pages Application (Spec + Claim(s) + Abstract)  
☐ No. of Pages Separate Power of Attorney  
☒ 25 No. of Numbered Claims Only  
☒ Declaration (11 of pages)  
☒ Assignment ☒ Cover Sheet  
☐ No. of Priority Documents  
☒ 14 No. of Sheets of Drawings (Fig(s) 1-13 )  
☒ IDS ☐ Appendix for Cited Appl(s) ☒ Foreign Search Report/OA  
☒ PTO-1449 ☒ Cited Documents ☐ Nonpublication Request  
\$1040.00 Total Fee Charged to Deposit Account 033975  
Other:



CURRENT DUE DATE: January 5, 2005

PTO RECEIPT Attorney Docket: 011765-0313730

Atty: Jack S. Barufka/joyce hill

Appln. No: Date: December 7, 2004

Inventor(s): TIMOTHY JOHN MUNCASTER ET AL.

Title: MOUNTING DEVICE FOR A DISK DRIVE UNIT, RELEASABLE  
FASTENER AND METHOD OF TESTING A DISK DRIVE UNIT

☒ Preliminary Amendment ☒ Application Data Sheet  
☐ Appendix ☒ Utility/Design/Provisional  
☒ 38 No. of Pages Application (Spec + Claim(s) + Abstract)  
☐ No. of Pages Separate Power of Attorney  
☒ 25 No. of Numbered Claims Only  
☒ Declaration (11 of pages)  
☒ Assignment ☒ Cover Sheet  
☐ No. of Priority Documents  
☒ 14 No. of Sheets of Drawings (Fig(s) 1-13 )  
☒ IDS ☐ Appendix for Cited Appl(s) ☒ Foreign Search Report/OA  
☒ PTO-1449 ☒ Cited Documents ☐ Nonpublication Request  
\$1040.00 Total Fee Charged to Deposit Account 033975  
Other:

DT07 Rec'd PCT/PTO 07 DEC 2004

CURRENT DUE DATE: January 5, 2005

10/517189